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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,606	02/10/2004	Shinya Nakai	118621	1678
25944	7590	12/11/2007		
OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER VO, NGUYEN THANH	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 12/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/774,606	NAKAI, SHINYA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nguyen Vo	2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 8-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-7 in the reply filed on 09/24/2007 is acknowledged. The traversal is on the ground(s) that (i) species IV corresponds to Figs. 10 and 11, not Fig. 9 as asserted in the Election of Species Requirement, (ii) the subject matter of all species is sufficiently related that a thorough search for the subject matter of any one species would encompass a search for the subject matter of the remaining species. Thus, it is respectfully submitted that the search and examination of the entire application could be made without serious burden. This is not found persuasive because:

Regarding applicant's argument (i), even if species IV corresponds to Figs. 10 and 11, not Fig. 9 as stated by applicant, the restriction requirement is still proper because figures 10 and 11 are not claimed by other species I-III;

Regarding applicant's argument (ii), the search and examination of the entire application would place serious burden on the examiner because the embodiments of figures 1, 16, 21 and 10-11 are clearly independent or distinct.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2618

3. Claims 1-2, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn (US 2002/0090974 A1, cited by examiner) in view of Ikata (5,786,738, cited by examiner).

As to claim 1, Hagn discloses a front end module for processing transmission signals and reception signals of a time division multiple access system and transmission signals and reception signals of a code division multiple access system (see figure 5; see also paragraph [0005] which discloses pure FDD such as CDMA, and mixed FDD/TDD mode such as TDMA), the front end module comprising a first separating means (see the diplexer DL1) connected to an antenna A and separating the transmission signals and the reception signals of the time division multiple access system from the transmission signals and the reception signals of the code division multiple access system (see paragraph [0038]; see also paragraph [0005] which discloses pure FDD such as CDMA, and mixed FDD/TDD mode such as TDMA); a second separating means (see the switch US1) connected to the first separating means and separating the transmission signals of the time division multiple access system from the reception signals of the time division multiple access system (see paragraphs [0038]-[0040]); a duplexer (see the duplexer DU1; paragraph [0040]) connected to the first separating means, including two filters BDU' and BDU", and separating the transmission signals of the code division multiple access system from the reception signals of the code division multiple access system (see paragraphs [0038]-[0040]); and a single multi-layer substrate for integrating the first separating means, the second separating means and the duplexer (see paragraphs [0013], [0057]-[0059]).

Art Unit: 2618

Hagn fails to disclose that the duplexer includes two acoustic wave elements each of which functions as a filter as claimed. Ikata discloses that a duplexer includes two acoustic wave elements each of which functions as a filter (see column 5 lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Ikata to Hagn, in order to obtain a duplexer which provides an improved flexibility in terms of the orientation of the external connection terminals (as suggested by Ikata at column 2 lines 47-53).

As to claim 2, Hagn further discloses a filter SF2 (see figure 5) connected to the second separating means, a filter EF2 (see figure 5) connected to the second separating means, a filter BDU' connected to the duplexer; and the multi-layer substrate is used to further integrate the filters (see paragraphs [0013], [0057]-[0059]).

As to claims 5-7, the combination of Hagn and Ikata further discloses that the duplexer includes a chip or two chips (see the SAW filter chips 33a, 33b in figure 10 of Ikata), and a mounting board 62 including components of the duplexer (see the matching circuit 68) except the acoustic wave elements 33a, 33b; and the duplexer is mounted on the multi-layer substrate (see Hagn, paragraphs [0057]-[0059]).

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn in view of Ikata as applied to claim 1 above, and further in view of Katagishi (US 2004/0047306 A1, cited by examiner).

As to claim 3, Hagn does disclose power amplifiers as claimed (see paragraph [0014]), but fails to disclose integrating the power amplifiers in the substrate as claimed. Katagishi discloses integrating power amplifiers 31, 33 and duplexer 2 in a substrate

Art Unit: 2618

(see paragraph [0039]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Katagishi to Hagn, in order to reduce the implementing cost as well as the weight and size of the front end circuit.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagn in view of Ikata as applied to claim 1 above, and further in view of Gardenfors (US 2006/0062165 A1, cited by examiner).

As to claim 4, Hagn does disclose an antenna A as claimed (see figure 5), but fails to disclose integrating the antenna in the substrate as claimed. Gardenfors discloses integrating antenna 202 and a front end circuit in a substrate (see paragraph [0039]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Gardenfors to Hagn, in order to reduce the implementing cost as well as the weight and size of the front end circuit.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kearns (US 7,038,551) discloses antenna duplexer.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on M-F.

Art Unit: 2618

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nguyen Vo  
Primary Examiner  
Art Unit 2618

*Nguyen Vo*  
12-3-2007